

# Macdonald Wagner

AT/15.6/255

Attention: Dr. D.N. Cooper

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**With Compliments**

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ATOICADOC  
20-May-87

1.

AUSTRALIA TELESCOPE  
OPERATING INSTRUCTIONS  
CULGOORA ANTENNAS

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ATP104

EMERGENCY STOPS

The emergency stop relay ESR (located in the pedestal room main switchboard) is normally energised. If any of the following normally closed contents are not closed ESR will drop out.

Emergency Stop Push button in Feed Cone  
Emergency Stop Push button in Vertex Room  
Emergency Stop Push button Outside Vertex Room  
Emergency Stop Push button Outside Vertex Room  
Emergency Stop Push button Alidade Level  
Emergency Access safety limit switch on gate  
Emergency Stop Push button Outside Pedestal Room (At access steps)  
Emergency Stop Push button Inside Pedestal Room  
Emergency Stop Push button Pedestal Room Switchboard

The ES Push buttons are stay lock types. When pushed they remain in and must be pulled out to reset. They can be fitted with a DANGER tag or padlock when in the off position. The emergency stop relay stops the following:

All long travel drives  
The servo positioning drives (both Az. and El.)  
The turret drive when in automatic mode.

BEFORE OPERATING ANY DRIVES CHECK THAT ALL STOPS ARE RESET AND GATE IS LOCKED SHUT.

Note: A changeover contact of ESR is wired as an input to the Antenna control computer so that the status of ESR can be monitored.

Issued to

~~CSIRO Culgoora~~

CSIRO Culgoora

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EDI.

LONG TRAVEL

A. Jacking

- o Check that antenna is in stow position:  
Azimuth = Stairs line up  
Elevation = Zenith  
Both lock pins line up.
- o Check that hydraulic oil level is OK.
- o Change from mains power to generator (Refer page 4).
- o Restart the pedestal room air conditioning.
- o Retract all four pedestal locking pins.
- o Reset lock off stop push button at hydraulic pump.
- o Start pump.
- o Press "Raise" push button and hold in until raise is complete.
- o Check indicating lights: 4 show cylinders taking load and 1 shows all cylinders reached nominal stroke.
- o Stop hydraulic jacking pump before proceeding with long travel.

B. Travel - Preparation

- o Check the fuel level gauge on the diesel generator.
- o Reset lock off stop buttons on slow speed pendant controller and in slow speed control box.
- o Reset lock off stop buttons in both long travel control boxes (at seats).
- o Check that antenna is in stow position, Azimuth and Elevation.
- o Check that all pedestal lock pins are properly secured in the retracted position.
- o Check that jacking is complete.
- o Check that all emergency stops are reset (refer page 1).
- o Check that all umbilical cables have been disconnected and stored in the cable storage box.
- o Check that cable storage box lid is shut.

If all of the above are correct the "READY FOR LONG TRAVEL" indicating lights will be lit. There is one light at each travel control station.

- o Check overtravel limit switches (Antennas 1, 5 and 6 only) lever should point downwards.

C. Long Travel - High Speed

Max speed 1m/sec.

- o At the appropriate drivers seat, open the long travel control box, press the joystick in any direction. The start warning hooter will sound for x seconds, then the antenna will move under controlled acceleration.
- o Release the joystick and the antenna will stop under controlled deceleration.

Note: Use EMERGENCY STOP button for emergency ONLY. To sound hooter release joystick and then hold it in again.

- o At completion close and seal control box.

D. Long Travel - Slow Speed

Adjustable speed 1-10mm/sec.

- o At the slow speed long travel control box remove the pendant controller.
- o Set speed potentiometer to desired speed:  
CW = Faster  
Anti CW = Slower.
- o Press and hold appropriate button (EAST or WEST).
- o If necessary vary the speed while holding the button in.
- o Position antenna accurately at station.
- o Return pendant to box.
- o Close and seal control box at completion.

E. Lowering

- o Start Hydraulic jacking pump.
- o Press "lower" button, partially lower and check position.
- o When fully lowered press lock off stop button and leave it in the off position.
- o Lock down all four pedestal lock pins.
- o Reconnect all umbilical cord plugs and change from generator power to mains power. (Refer page 4)

## DIESEL GENERATOR

### 1. Automatic mode

- (a) The diesel generator should be left in automatic mode except for testing and maintenance.

The manual/auto selector switch is located on the generator control panel, with indicating lights to show manual or auto selection.

When mains power fails for more than the preset time interval (timer DST) the diesel engine starts automatically. When the engine speed is stabilised the generator power is automatically connected to the main switchboard.

- (b) Changing from Mains power to Generator Power (eg. preparation for long travel).
- o Turn off the mains power at the main switchboard in the pedestal room. The generator will then start automatically as described above.
  - o Restart the pedestal room air conditioning.
  - o Mains plug and "umbilical" cord connections may now be removed.
- (c) Changing from Generator Power to Mains Power (eg. at completion of travel).
- o Check that antenna is correctly positioned at station.
  - o Check that antenna is completely lowered and locked down on all four (4) pedestal lock pins.
  - o Open cable storage box, clip door in place and plug in mains power plug and other cable plugs.
  - o Switch on mains power at the main switchboard.
  - o After a time delay (timer MPT) mains power will be automatically reconnected.
  - o After a further time delay (timer EHT) the diesel engine will automatically shut down.

### 2. Manual Mode

- (a) Manual mode may be used to test run the diesel engine under no load conditions or to transfer from mains power to generator power with minimum interruption.

- (b) Transfer from Mains power to generator power:
  - o Select Manual at generator control panel.
  - o Press start Push button at generator control panel.
  - o Wait for engine to stabilise at correct speed.
  - o At main switchboard press mains/power "off" push button.
  - o Press generator power "on" push button.
  - o Isolate mains power input by turning off the mains power circuit breaker.
  - o Restart the pedestal room air conditioning unit.
  - o Mains power plug and "umbilical" cord connections may now be removed.
- (c) Transfer from generator power to mains power.
  - o Check that antenna is correctly positioned at station.
  - o Check that antenna is completely lowered and locked down on all four (4) pedestal lock pins.
  - o Open cable storage box, clip door in place and plug in mains power plug and other cable plugs.
  - o At the main switchboard turn on the mains power circuit breaker.
  - o When the "main power available" indicating light is lit press generator power "off" push button.
  - o Press the mains power "on" push button.
  - o Restart the pedestal room air conditioning.
  - o At the generator control panel stop the engine.
  - o Return the generator manual/auto switch to auto.